

Recombinant Rat PA2G5 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52388

Size: 10ug, 100ug

Protein Name: Phospholipase A2 group V (EC 3.1.1.4) (PLA2-10) (Phosphatidylcholine 2-acylhydrolase 5)

Synonym: Pla2g5

UniProt ID: P51433

UniProt Link: www.uniprot.org/uniprotkb/P51433/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 137 AA

Molecular Weight: 16 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MKRLTLAWFLACSVPAVPGGLLELKSMIEKVTGKNAVKNYGFYGCYCGWGGHGTPKDGTDWCCR
MHDRCYGLLEEKHCAIRTQSYDYRFTQDLVICEHDSFCPVRLCACDRKLVYCLRRNLWSYNRLYQY
YPNFLC

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Phospholipase A2 group V (EC 3.1.1.4) (PLA2-10) (Phosphatidylcholine 2-acylhydrolase 5) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Secretory calcium-dependent phospholipase A2 that primarily targets extracellular phospholipids. Hydrolyzes the ester bond of the fatty acyl group attached at sn-2 position of phospholipids (phospholipase A2 activity), preferentially releasing fatty acyl groups with a low degree of unsaturation such as oleoyl (C18:1) and linoleoyl (C18:2) groups (By similarity). Hydrolyzes low-density lipoprotein (LDL) phospholipids releasing unsaturated fatty acids that drive macrophage polarization toward an M2 phenotype (By similarity). May act in an autocrine and paracrine manner. Contributes to lipid remodeling of cellular membranes at different subcellular locations and generation of lipid mediators involved in pathogen clearance. Cleaves sn-2 fatty acyl chains of cardiolipin, a major component of the inner membrane of mitochondria and bacterial membranes. Promotes phagocytosis of bacteria in macrophages through production of lysophosphatidylethanolamines. Displays bactericidal activity against Gram-positive bacteria by directly hydrolyzing phospholipids of the bacterial membrane (By similarity). Promotes phagocytosis and killing of ingested fungi likely through controlling phagosome-lysosome fusion and phagosome maturation (By similarity). Plays a role in biosynthesis of cysteinyl leukotrienes (CysLTs) in myeloid cells. In eosinophils, triggers perinuclear arachidonate release and LTC₄ synthesis in a PLA2G4A-independent way. In neutrophils, amplifies CysLTs biosynthesis initiated by PLA2G4A (By similarity). Promotes immune complex clearance in macrophages via stimulating synthesis of CysLTs, which act through CYSLTR1 to trigger phagocytosis. May regulate antigen processing in antigen-presenting cells. In pulmonary macrophages regulates IL33 production required for activation of group 2 innate lymphoid cells (By similarity). May play a role in the biosynthesis of N-acyl ethanolamines that regulate energy metabolism. Hydrolyzes N-acyl phosphatidylethanolamines to N-acyl lysophosphatidylethanolamines, which are further cleaved by a lysophospholipase D to release N-acyl ethanolamines (By similarity).

Subcellular Localization: Secreted . Cell membrane . Cytoplasmic vesicle, phagosome . Recycling endosome . Golgi apparatus, cis-Golgi network . Golgi apparatus, trans-Golgi network .

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer- composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.